

# CULINARY WATER STANDARD DRAWINGS

REVIEWED JANUARY 2009

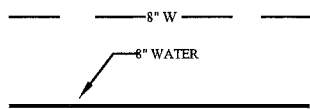


**SOUTH JORDAN**  
UTAH

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**SOUTH JORDAN CITY**

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EXISTING WATER



PROPOSED WATER



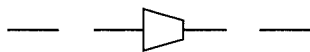
VALVE



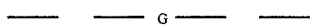
FIRE HYDRANT



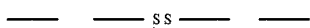
PRESSURE REGULATING VALVE



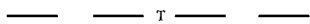
REDUCER/ENLARGER



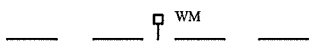
GAS LINE



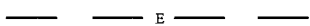
SEWER LINE



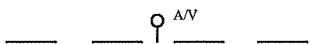
TELEPHONE LINE



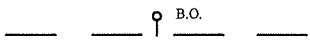
WATER METER



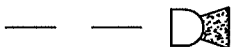
ELECTRIC LINE



AIR AND VACUUM VALVE



BLOW-OFF



END CAP



PLUG



THRUST BLOCK

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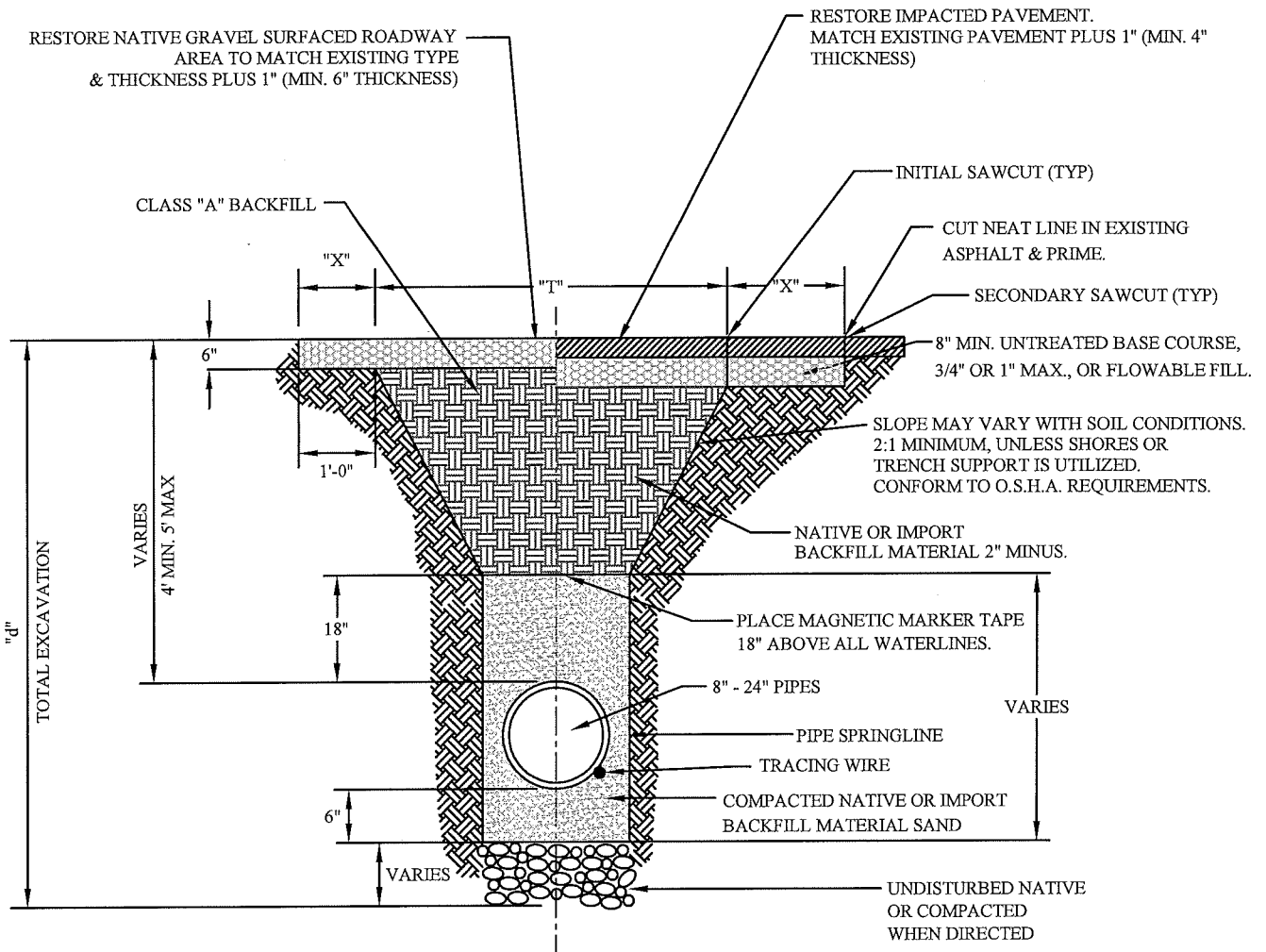


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STANDARD SYMBOLS

STANDARD  
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**3005**



"T"=TRENCH WIDTH  
 "X"=2' IF "d" IS LESS THAN 42"  
 "X"=3' IF "d" IS GREATER THAN 42"

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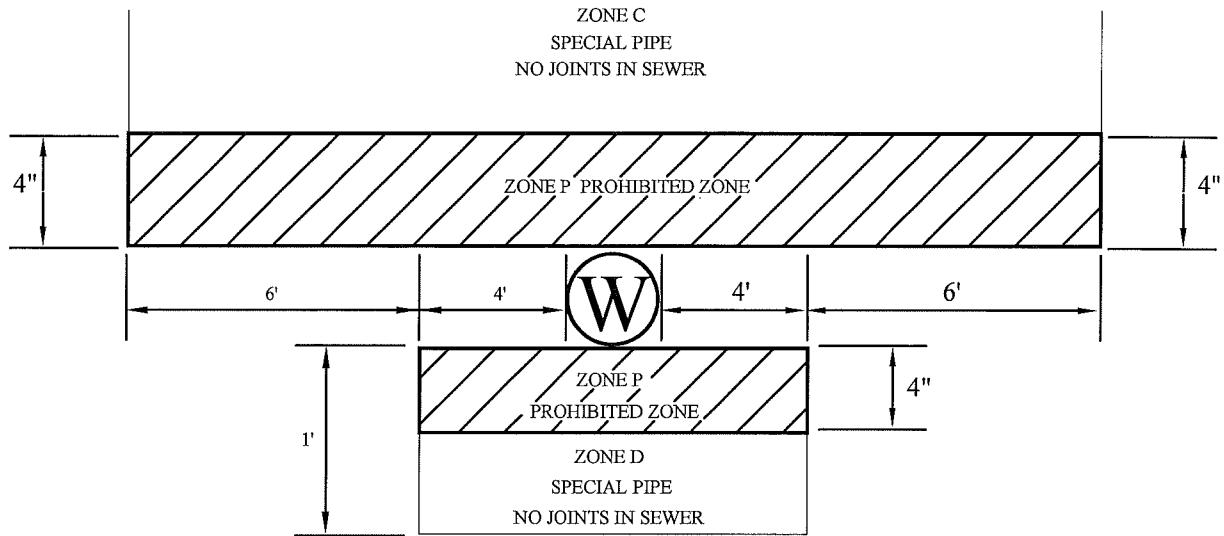
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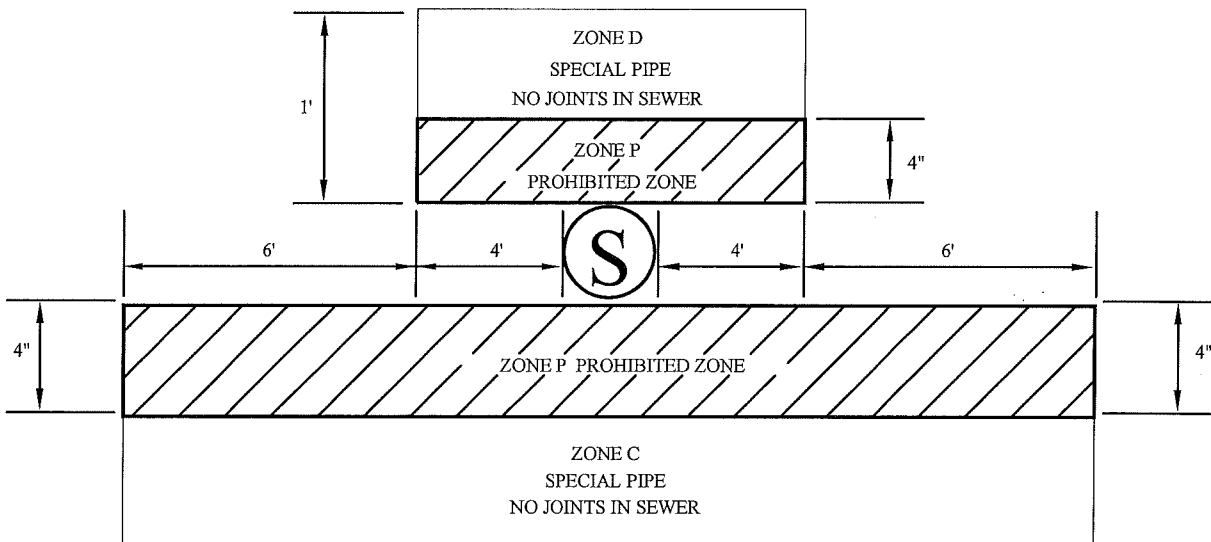
## TRENCH CROSS SECTION TERMINOLOGY & STANDARD SIZES

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**3010**

## CONSTRUCTION AT CROSSINGS



### CASE 1 NEW WASTEWATER (SEWER) MAIN



### CASE 2 NEW WATER MAIN

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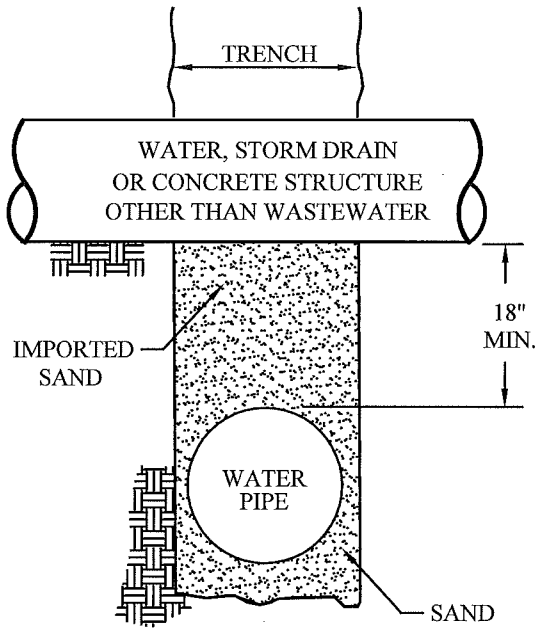
DATE

3/99

SEPERATION REQUIREMENTS FOR  
WATER AND WASTEWATER LINES

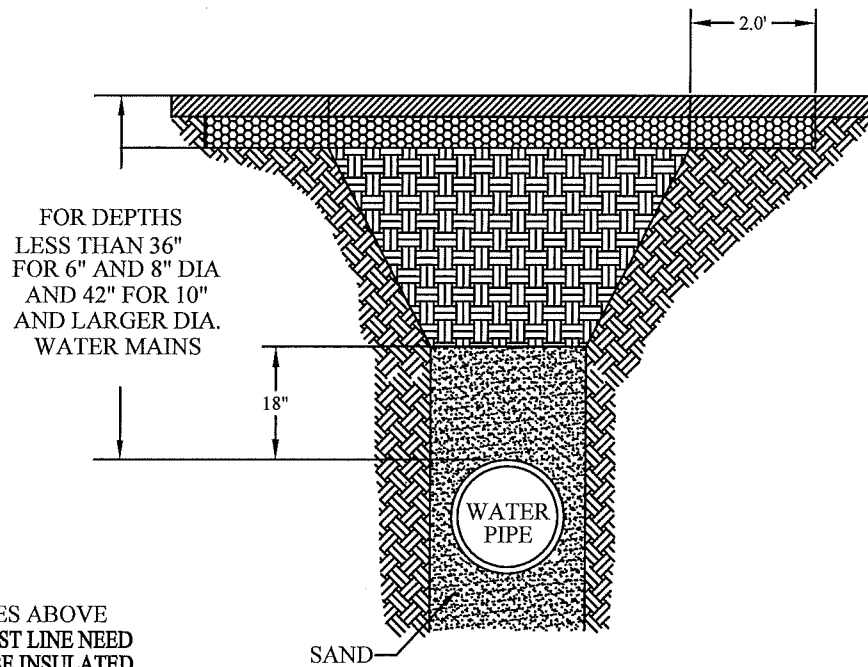
STANDARD  
DRAWING

3020



### ENCASEMENT NEAR OBSTRUCTIONS

(SEE NOTE 3)



\*NOTE: PIPES ABOVE  
FROST LINE NEED  
TO BE INSULATED.

### ENCASEMENT FOR COVER LESS THAN MINIMUM

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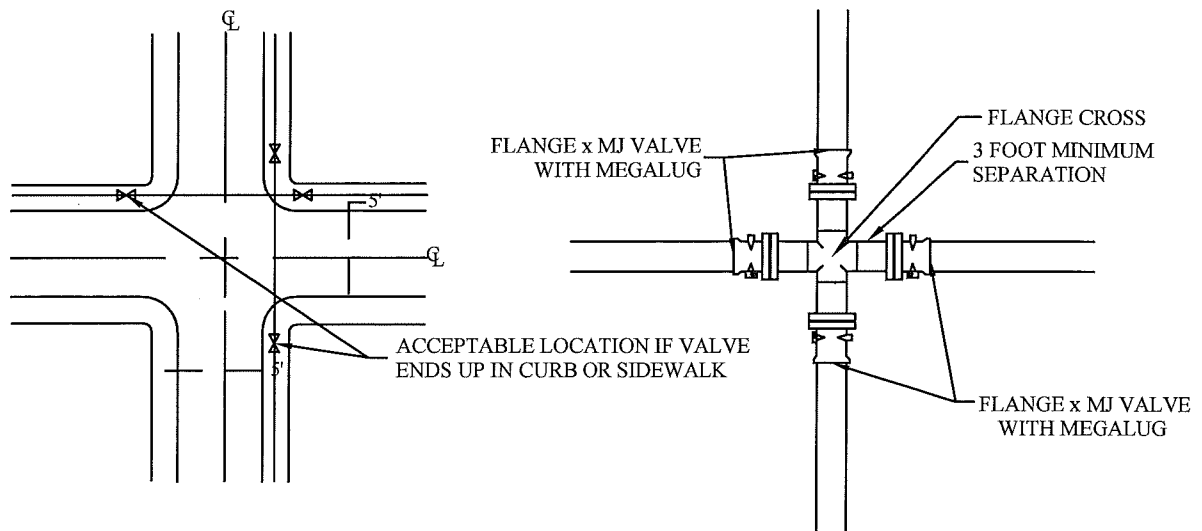


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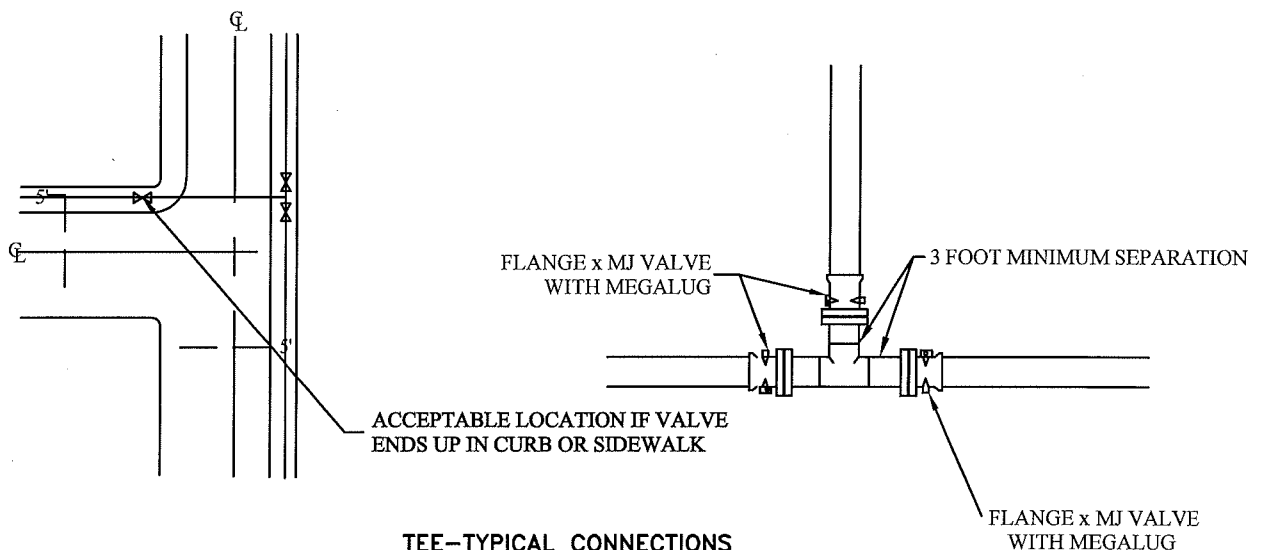
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**ENCASEMENTS PIPELINE**

STANDARD  
DRAWING  
**3025**



### CROSS-TYPICAL CONNECTIONS



### TEE-TYPICAL CONNECTIONS

#### NOTES:

1. VALVES SHALL GENERALLY BE LOCATED ON EACH BRANCH OF WATER MAIN INTERSECTIONS. WHERE RELATIVELY SHORT LINES LESS THAN 400 FEET IN LENGTH ARE INVOLVED, ONE OF THE TWO VALVES BETWEEN INTERSECTIONS MAY BE OMITTED.
2. WATER MAINS IN PUBLIC STREETS SHALL BE LOCATED PARALLEL TO STREET CENTERLINES WITHIN PARKSTRIPS ON THE NORTH AND EAST SIDES OF THE STREET.
3. FLANGE ALL VALVES UNLESS CONFLICT WITH CURB OR SIDEWALK.

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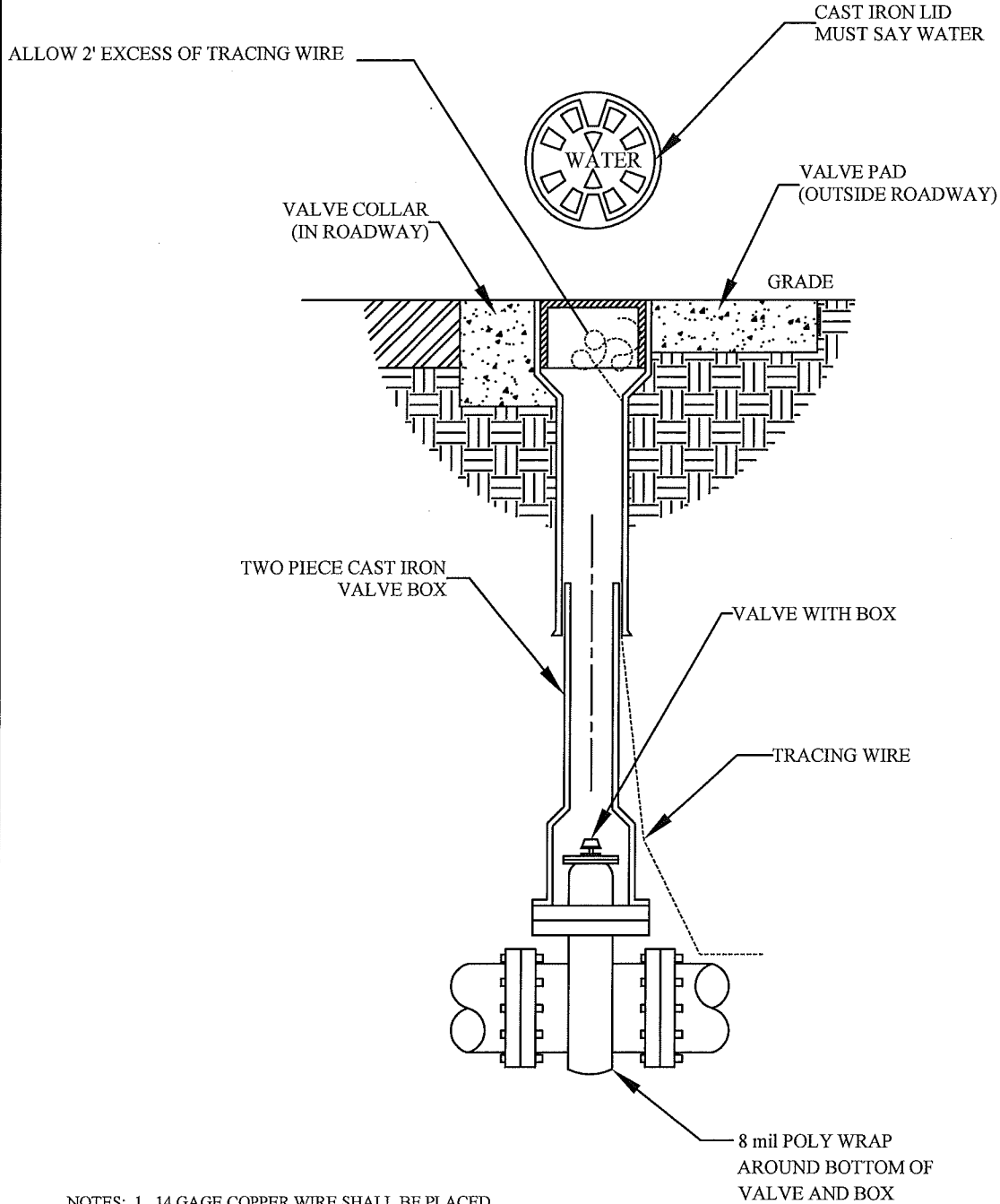


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**WATER MAIN CONNECTIONS  
AT INTERSECTIONS**

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DRAWING  
**3035**



- NOTES: 1. 14 GAGE COPPER WIRE SHALL BE PLACED OUTSIDE OF BOTTOM OF BOX AND INSIDE TOP OF BOX
2. VALVE OPERATING NUTS SHALL BE WITHIN 3' TO THE FINISHED SURFACE. EXTENTIONS STEMS WITH ROCK SHIELDS SHALL BE PROVIDED WHERE DEPTHS EXCEED 4'.

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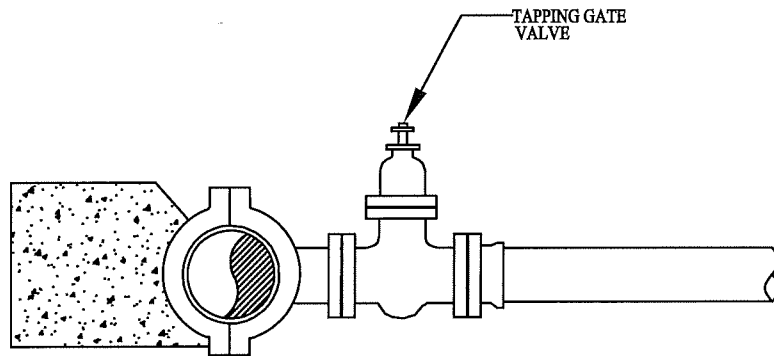
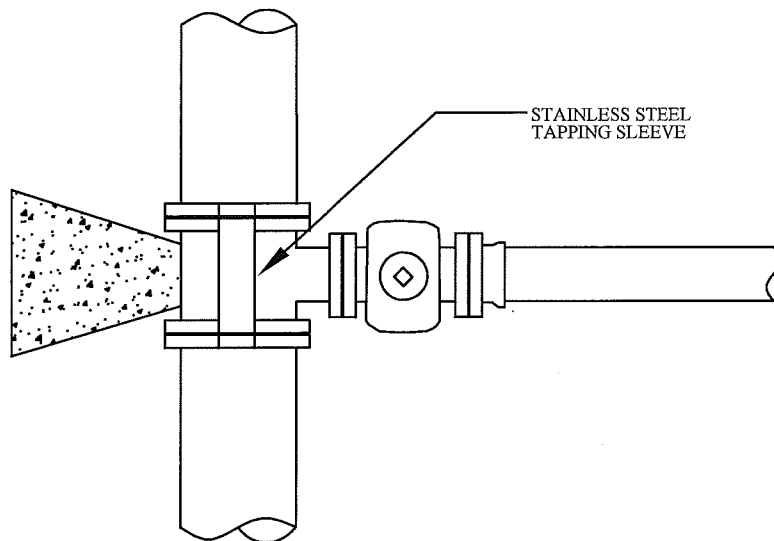


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**VALVE BOX INSTALLATION**

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**3040**



NOTES:

1. REFER TO SECTION 3.8 'MAIN LINE VALVES' FOR TAPPING SLEEVE AND VALVE REQUIREMENTS, AND SECTION 7.9 'HOT TAPPING' FOR INSTALLATION INSTRUCTIONS  
INTERSECTIONS MAY BE OMITTED.
2. SEE SECTION 3.4 'MAIN LINE FITTING' AND SECTION 7.11 'INSTALLATION OF VALVES AND FITTINGS' FOR INSTALLATION AND WRAPPING FOR BOLTED CONNECTIONS  
THRUST BLOCK DETAILS.

RECOMMENDED MATERIALS - STAINLESS STEEL TAPPING SLEEVE  
MANUFACTURER TO BE AWWA APPROVED.

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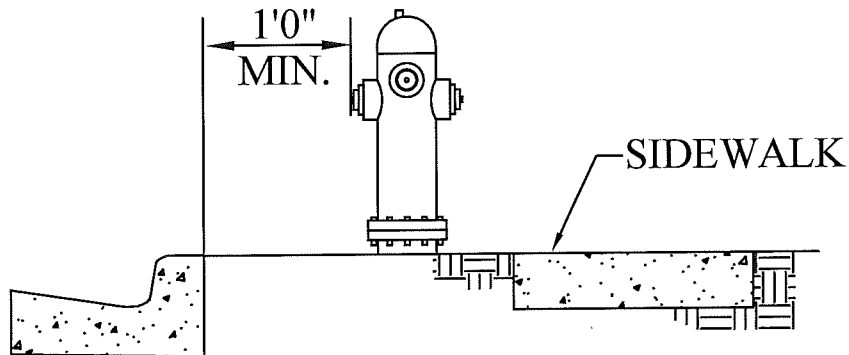
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**MECHANICAL JOINT  
TAPPING SLEEVE**

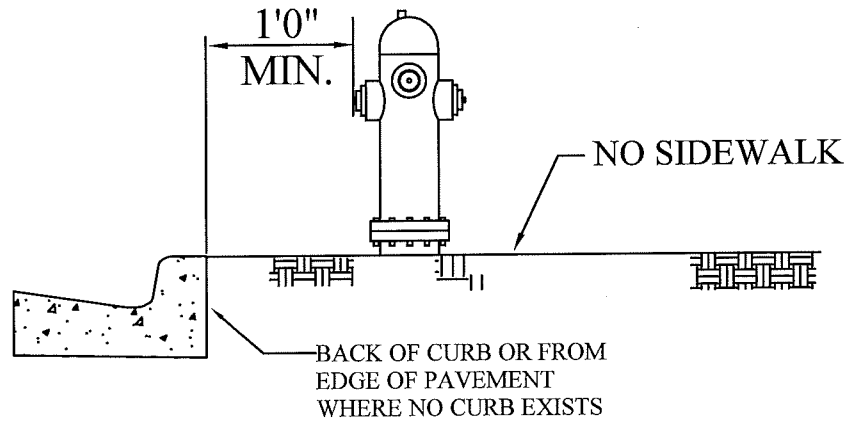
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## CASE 1



## CASE 2



### NOTES:

1. ABOVE GROUND UTILITIES SHALL BE LOCATED ON PROPERTY LINES SEPERATING LOTS.

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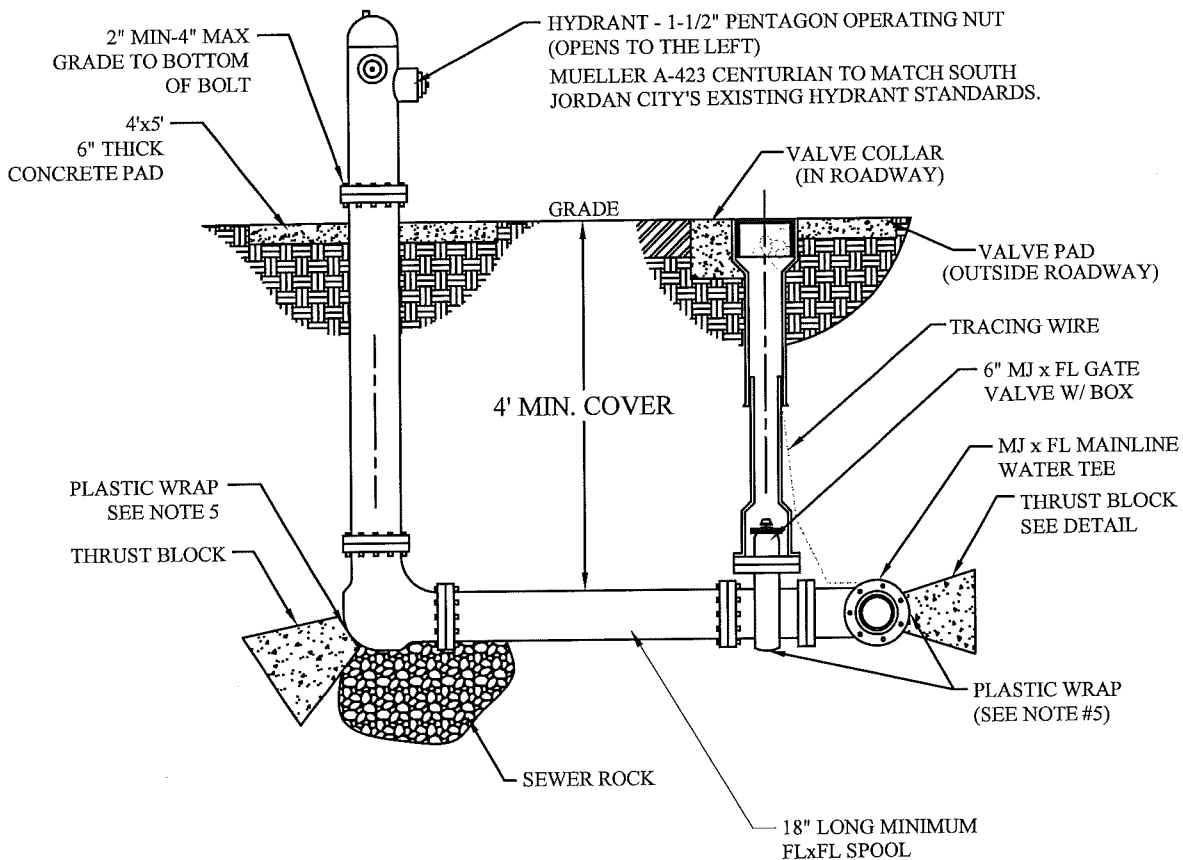


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**LOCATION OF  
FIRE HYDRANTS**

STANDARD  
DRAWING  
**3050**



#### NOTES:

1. INSPECTION: PRIOR TO BACKFILLING, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
2. BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER SPECIFICATIONS.
3. HYDRANT: DRY BARREL PER AWWA C502.
  - A. PROVIDE AT LEAST 1 CUBIC YARD OF SEWER ROCK AROUND DRAIN HOLE AT BASE OF HYDRANT. PLACE TAR PAPER OR PLASTIC OVER SEWER ROCK TO PREVENT SILTING.
  - B. PAINT FIRE HYDRANT RED PER SOUTH JORDAN CITY'S REQUIREMENTS.
  - C. APPLY POLY-FM GREASE TO ALL BURIED METAL SURFACES. WRAP WITH 8 mil THICK POLYETHYLENE SHEET AND TAPE WRAP.
  - D. ALL HYDRANTS NOT IN SERVICE SHALL BE BAGGED UNTIL WATER IS AVAILABLE
4. THRUST BLOCKS: REQUIRED FOR ALL CONNECTIONS INCLUDING FLANGED OR WELDED PIPE SYSTEMS.
5. PLASTIC WRAP: PRIOR TO POURING CONCRETE, APPLY POLY-FM GREASE AND WRAP PIPE SYSTEM AND FITTINGS WITH 8 mil THICK PLASTIC SHEET TO PREVENT BONDING OF CONCRETE TO PIPE SYSTEM AND FITTINGS.
6. PLACE FOUR (4) PROTECTIVE BOLLARDS AROUND HYDRANT IF DIRECTED BY SOUTH JORDAN CITY.

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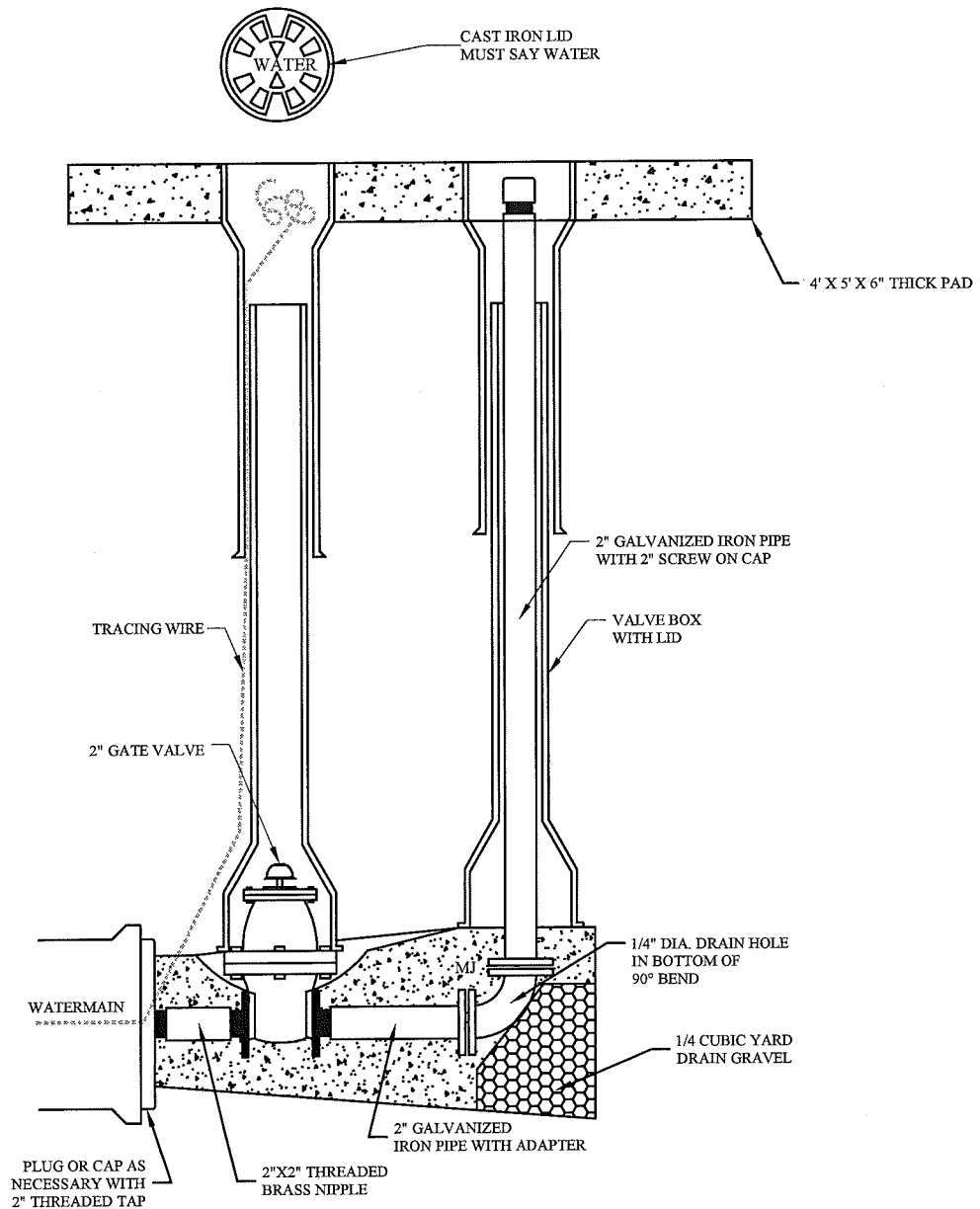


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**FIRE HYDRANT  
INSTALLATION**

STANDARD  
DRAWING  
**3055**



NOTES:

1. INSPECTION: PRIOR TO BACKFILLING AROUND THRUST BLOCK, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
2. BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER SPECIFICATIONS.
3. CONCRETE: CLASS 2,000 MINIMUM. POUR CONCRETE AGAINST UNDISTURBED SOIL.
4. TAPE: APPLY TAPE WRAP TO THE EXTERIOR OF ALL GALVANIZED PIPE PER AWWA C209
5. SPECIAL DESIGN: WATERMAINS 12" AND LARGER WILL REQUIRE SPECIAL WASHOUT ASSEMBLY DESIGN.
6. DRAINAGE: AFTER INSTALLATION OF WASHOUT VALVE ASSEMBLY, VERIFY THE WASHOUT VALVE RISER DRAINS TO GRAVEL.
7. WRAP ALL FOOTINGS PRIOR TO PLACEMENT OF THRUST BLOCKING

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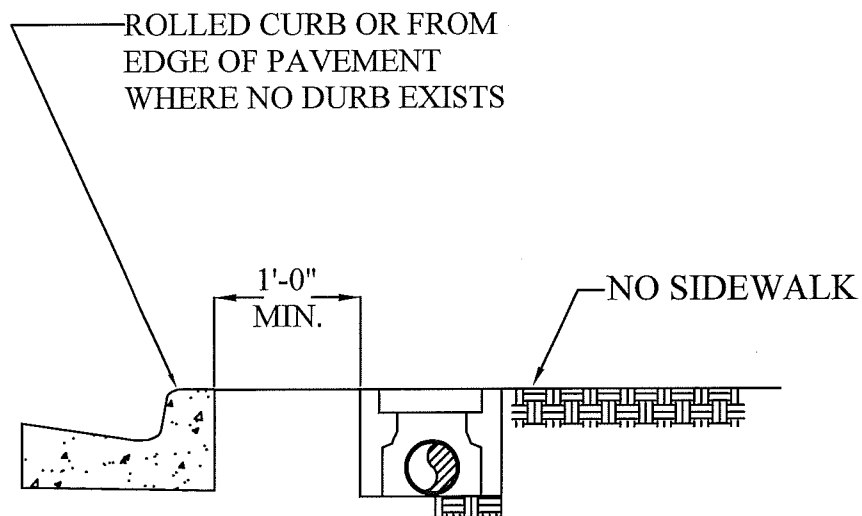
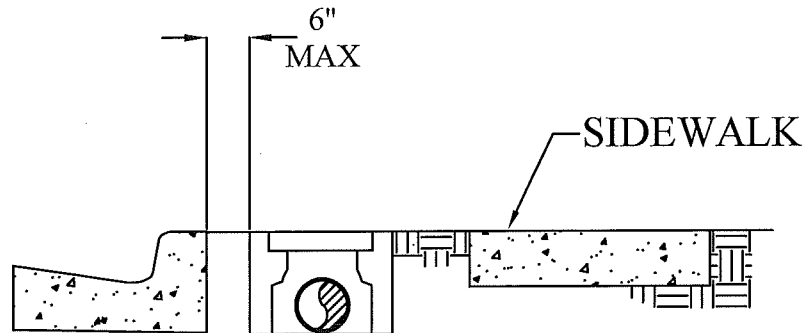


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WASHOUT VALVE ASSEMBLY

STANDARD  
DRAWING  
3060



NOTES:

1. METER BOXES SHALL BE LOCATED WITHIN 6" FROM THE BACK OF CURB. LONGITUDINAL AXIS PERPENDICULAR TO AND DIRECTLY BEHIND CURB.
2. METER BOXES SHALL NOT BE LOCATED IN DRIVEWAYS
3. COMBINATION AIR RELEASE AND VACUUM VALVE ASSEMBLIES SHALL BE LOCATED BEHIND THE SIDEWALK BUT WITHIN THE PUBLIC SERVICES EASEMENTS (PSE)

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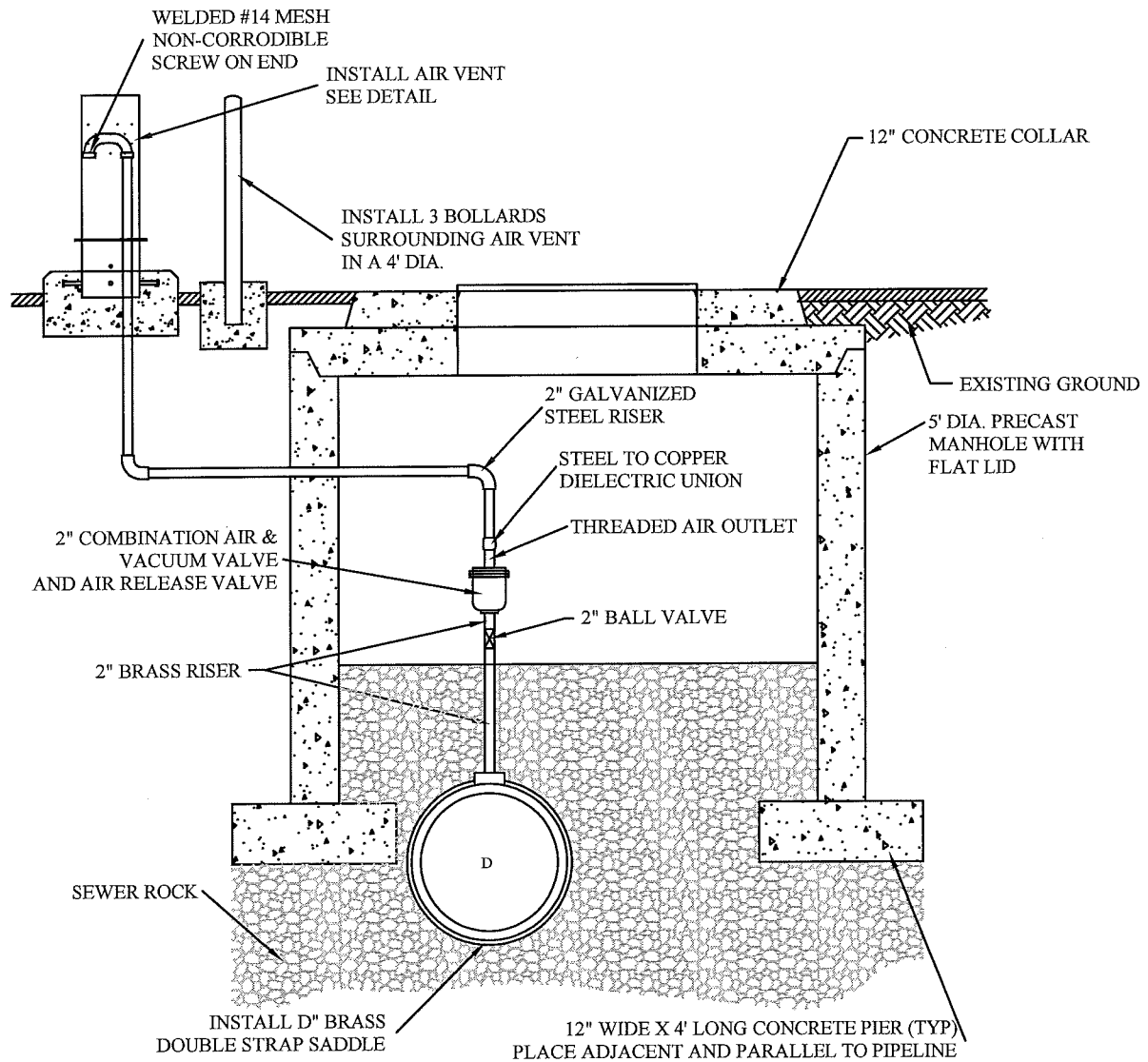


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WATER METER LOCATION

STANDARD  
DRAWING  
3065



NOTES:

1. INSPECTION: PRIOR TO BACKFILLING AROUND THE ASSEMBLY, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
2. BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER SPECIFICATIONS.
3. CONCRETE: CLASS 4,000. APPLY A SEALING/CURING COMPOUND PER SPECIFICATIONS.
4. SMALL FITTINGS: PROVIDE BRASS FITTINGS AND NIPPLES IF NOT SPECIFIED OTHERWISE. DO NOT USE GALVANIZED MATERIALS BELOW DIELECTRIC UNION.

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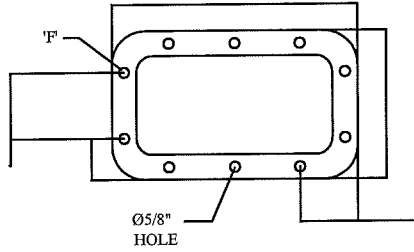


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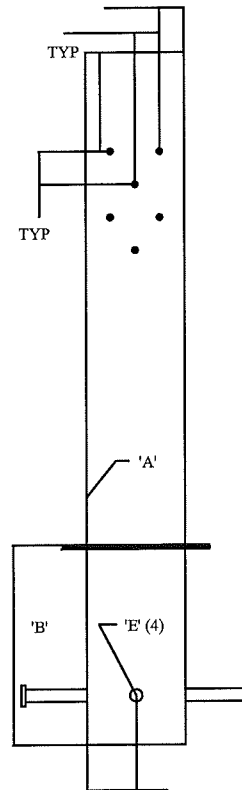
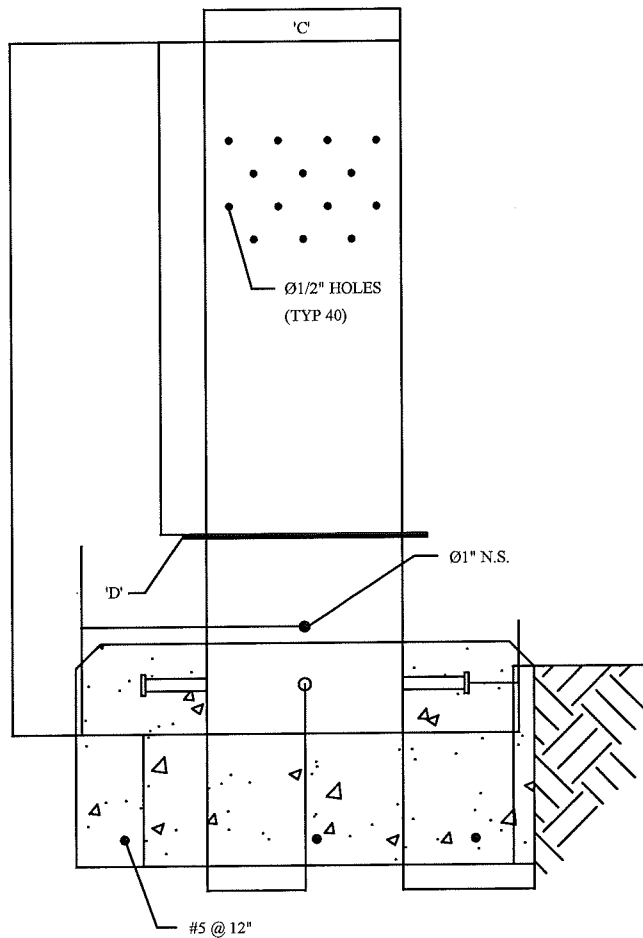
**COMBINATION AIR VACUUM  
VALVE ASSEMBLY**

STANDARD  
DRAWING  
**3070**



**FLANGE DETAIL**  
ITEMS REMOVED FOR CLARITY, N.T.S.

PARTS LIST		
ITEM	QTY	DESCRIPTION
A	1	TS 12" x 6" x 1/4" x 2'-6"
B	1	TS 12" x 6" x 1/4" x 12"
C	1	1/4" PL - 6" x 1'-0"
D	2	1/4" PL - 9" x 1'-3"
E	4	Ø3/4" x 4" H.S.A
F	10	Ø1/2" x 3" BREAKAWAY BOLTS



**SIDE VIEW**  
N.T.S.

**NOTES:**

1. OPEN TO AIR-PLACE A NO. 14 MESH NON-CORRODIBLE SCREEN OVER THE OPEN END OF P.V.C. PIPE. ATTACH W/S.S. HOSE CLAMP.
2. HOT DIPPED GALVANIZED STEEL STAND PIPE FOR AIR VENT.
3. 1 1/2" MIN. CHAMFER ALL AROUND CONCRETE BASE.

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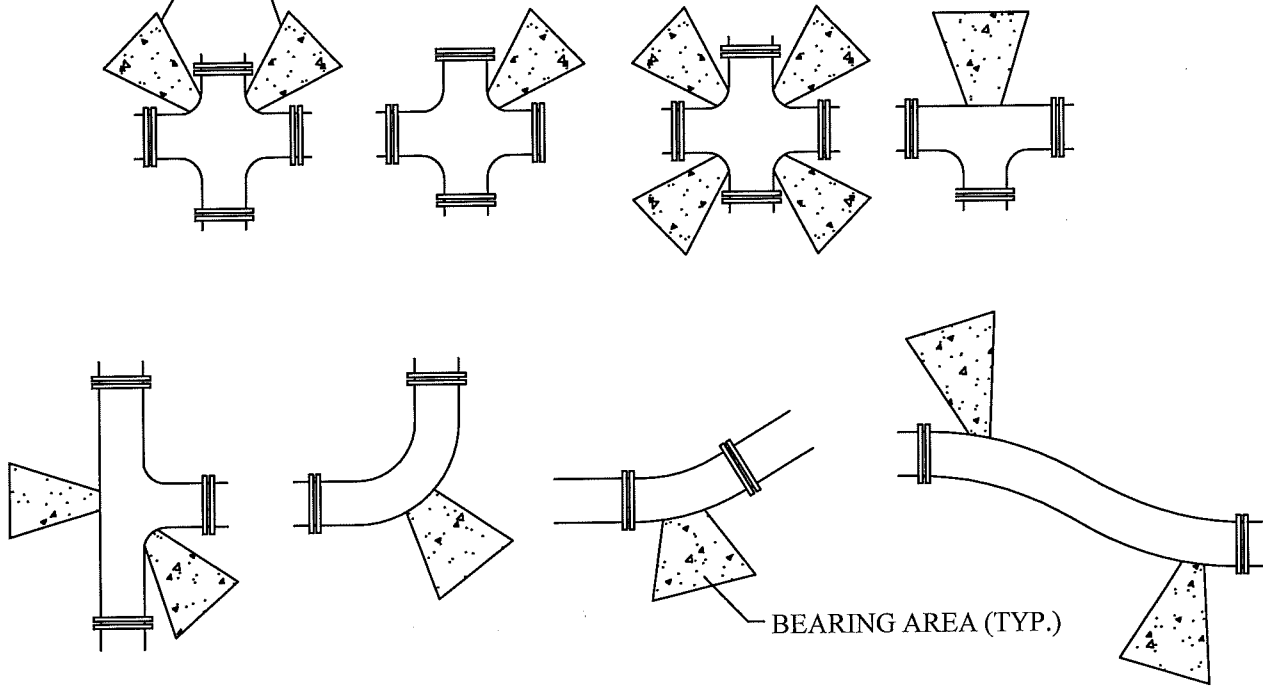
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**AIR VENT DETAIL**



STANDARD  
DRAWING  
**3075**

THE AREA OF BEARING PER THRUST BLOCK TO EQUAL 1/2 THE AREA SPECIFIED FOR THE LARGEST PIPE OR FITTING SIZE



NOTES:

1. INSPECTION: PRIOR TO BACKFILLING AROUND THRUST BLOCK, SECURE INSPECTIONS OF INSTALLATION BY ENGINEER.
2. BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER SPECIFICATIONS.
3. CONCRETE: CLASS 2,000 MINIMUM. POUR CONCRETE AGAINST UNDISTURBED SOIL.
4. PIPE JOINTS: DO NOT COVER WITH CONCRETE. LEAVE COMPLETELY ACCESSIBLE.
5. GREASE: APPLY POLY-FM GREASE TO ALL BURIED METAL SURFACES. WRAP WITH 8 MIL THICK POLYETHYLENE SHEET AND TAPE WRAP.
6. SPECIAL CONSTRUCTION REQUIREMENTS:
  - A. THRUST DESIGN FOR PIPE SIZES OR CONFIGURATIONS NOT SHOWN REQUIRE SPECIAL DESIGN.
  - B. BEARING AREAS, VOLUMES, AND SPECIAL THRUST BLOCKING DETAILS SHOWN ON DRAWINGS TAKE PRECEDENCE OVER THIS PLAN.
  - C. REINFORCING STEEL BARS TO BE EPOXY COATED AT LEAST 15 MILS THICK. MINIMUM STRESS YIELD STRENGTH OF TIE DOWN BARS IS 70,000 PSI.
  - D. LOCKING RESTRAINT DEVICES MAY BE USED IN CONJUNCTION WITH CONCRETE THRUST BLOCKING (AT OPTION OF ENGINEER).
  - E. RESTRAINT SIZING IS BASED UPON A MAXIMUM OPERATING PRESSURE OF 150 PSI AND A TEST PRESSURE OF 200 PSI, AND A MINIMUM SOIL BEARING STRESS OF 2,000 PSF. OPERATING PRESSURES IN EXCESS OF 150 PSI OR SOILS WITH LESS THAN 2,000 POUND BEARING STRENGTH WILL REQUIRE SPECIAL DESIGN.
  - F. CONCRETE MUST BE ALLOWED TO CURE IN THRUST RESTRAINTS FOR 5 DAYS PRIOR TO PRESSURIZING WATER LINES OR HAVE ADDITIONAL APPROVED THRUST RESTRAINTS INSTALLED PRIOR TO PRESSURIZING THE WATER LINE.
7. MEGALUGS REQUIRED ON ALL FITTINGS

MINIMUM BEARING AREA IN SQ. FT.						
SIZE OF PIPE	TEES, VALVES DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS	11 1/4° BENDS	
4"	2	3	2	2	2	
6"	4	5.5	3	1.5	1	
8"	6.5	9.5	5	2.75	1.5	
12"	14	20	11	5.5	3	
14"	19	26.5	14.5	7.5	4	
16"	24	34	18.5	9.5	6	
20"	27	52	28.5	14.5	16	
24"	53	74	41	21	53	
30"	81	114	62	32	16	

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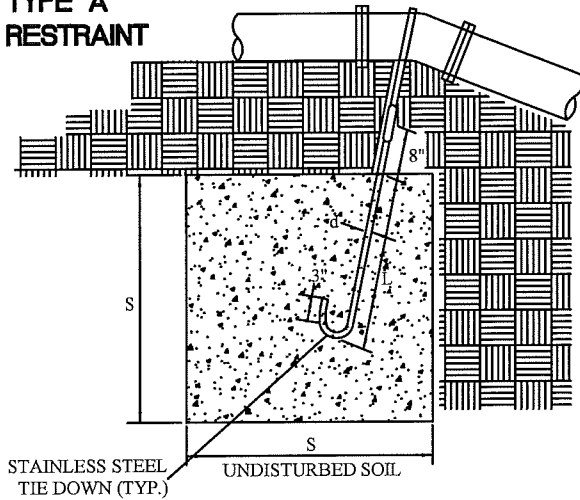
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DIRECT BEARING  
THRUST BLOCKS

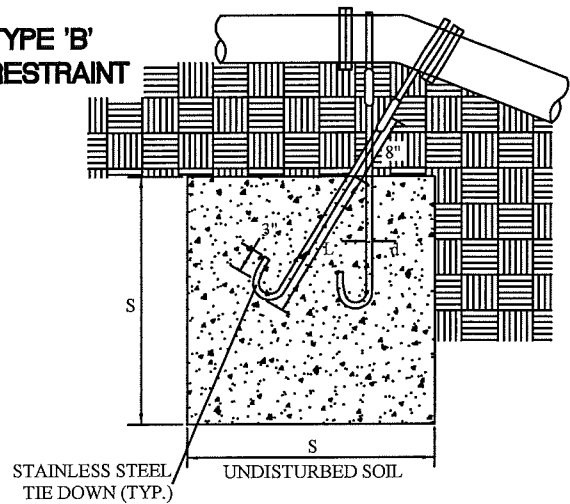


STANDARD  
DRAWING  
3080

### TYPE 'A' RESTRAINT



### TYPE 'B' RESTRAINT



**TYPE 'A' RESTRAINT**  
FOR 11 1/4°-22 1/2° VERTICAL BENDS

TABLE OF DIMENSIONS					
	VB		S	d	L
PIPE SIZE NOMIN. DIAMETER - INCH	VERTICAL BEND DEGREES	NO. OF CU. FT. OF CONC. BLOCKING	SIDE OF CUBE FEET	DIAMETER OF SHACK	DEPTH OF RODS IN CONCRETE FT.
4"	11 1/4°	8	2.0	5/8"	1.5
	22 1/2°	15.6	2.5	5/8"	2.0
6"	11 1/4°	15.6	2.5	5/8"	2.0
	22 1/2°	34.3	3.25	5/8"	2.0
8"	11 1/4°	27	3.0	5/8"	2.0
	22 1/2°	64	4.0	5/8"	2.0
12"	11 1/4°	64	4.0	3/4"	2.0
	22 1/2°	125	5.0	3/4"	3.0
16"	11 1/4°	107	4.25	7/8"	3.0
	22 1/2°	216	6.0	7/8"	4.0
20"	11 1/4°	138	5.17	1"	3.5
	22 1/2°	334	6.94	1"	4.0
24"	11 1/4°	240	6.22	1"	4.0
	22 1/2°	476	7.81	1"	4.0
30"	11 1/4°	369	7.17	1"	4.0
	22 1/2°	733	9.02	1"	4.0

**TYPE 'B' RESTRAINT**  
FOR 45° VERTICAL BENDS

TABLE OF DIMENSIONS					
	VB		S	d	L
PIPE SIZE NOMIN. DIAMETER - INCH	VERTICAL BEND DEGREES	NO. OF CU. Y. OF CONC. BLOCKING	SIDE OF CUBE FEET	DIAMETER OF SHACK	DEPTH OF RODS IN CONCRETE FT.
4"	45°	1	3.0	5/8"	2.0
				5/8"	
6"	45°	2.37	4.0	5/8"	2.5
				5/8"	
8"	45°	3.97	4.75	5/8"	2.0
				5/8"	
12"	45°	9.04	6.25	5/8"	4.0
				5/8"	
16"	45°	17.24	7.75	3/4"	4.0
				3/4"	
20"	45°	26.52	8.95	3/4"	4.0
				3/4"	
24"	45°	37.82	10.07	3/4"	4.0
				3/4"	
30"	45°	58.26	11.63	3/4"	4.0
				3/4"	

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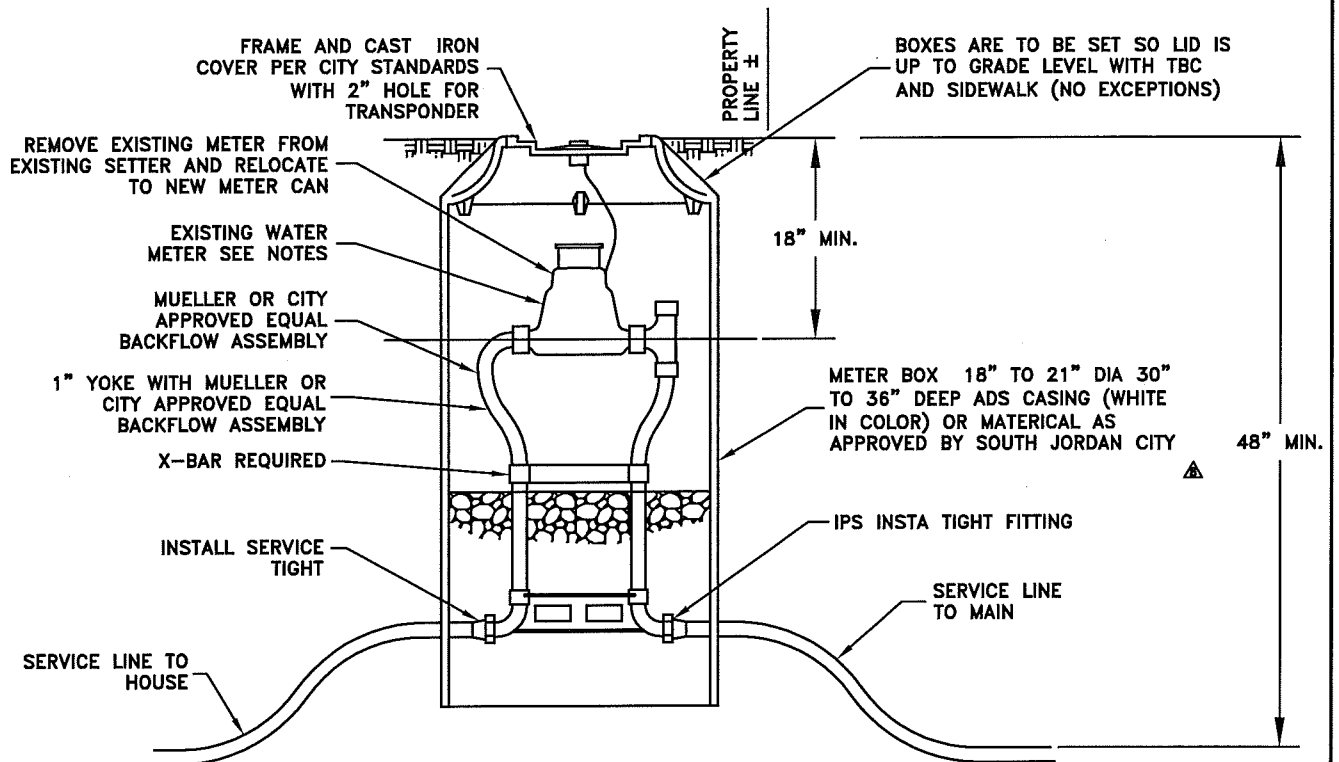
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**TIE DOWN  
THRUST RESTRAINTS**

STANDARD  
DRAWING  
**3085**





### METER SERVICE

N.T.S.

#### NOTES:

1. INSPECTION: PRIOR TO BACKFILLING AROUND THE METER BOX, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
2. BACKFILLING: INSTALL ALL BACKFILL MATERIAL PER APWA SECTION 02320 IN LIFTS NOT EXCEEDING 6 INCHES AFTER COMPACTION. COMPACT EACH LIFT TO A MINIMUM RELATIVE DENSITY OF 96 PERCENT.
3. PLACEMENT:
  - A. DO NOT INSTALL METERS IN HARD SURFACE 2 FEET MINIMUM FROM LID.
  - B. IN NEW CONSTRUCTION, INSTALL METER AT CENTER OF LOT OF PER SOUTH JORDAN CITY REQUIREMENTS.
  - C. ALL METERS ARE TO BE INSTALLED IN THE PARK STRIP OR WITHIN 4 FEET OF THE PROPERTY LINE (STREET SIDE) AND OUTSIDE OF HARD SURFACE.

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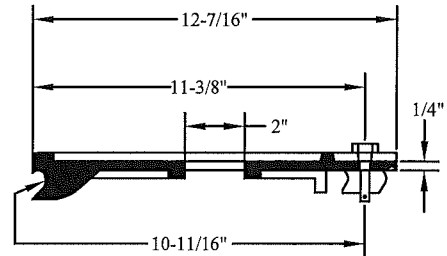
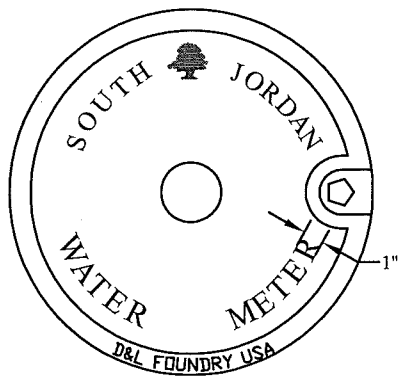


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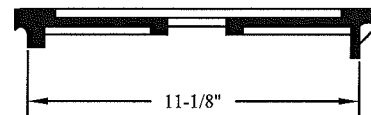
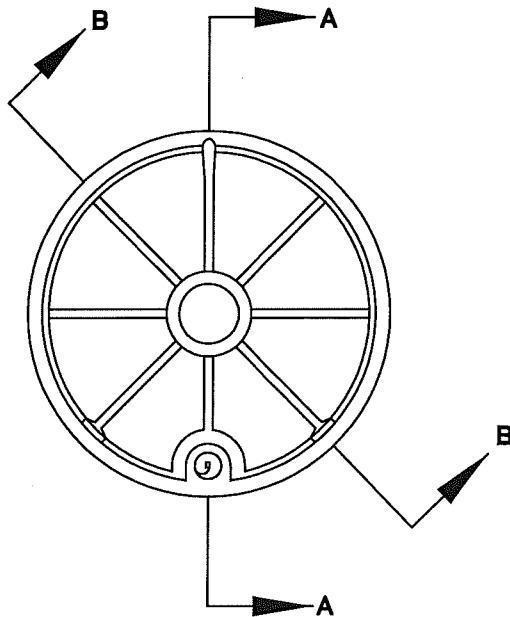
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	BY	

**METER SERVICE**

STANDARD  
DRAWING  
**3090**



**SECTION A-A**



**SECTION B-B**

D&L FOUNDRY & SUPPLY  
MODEL #L-2240-14  
13 LBS.

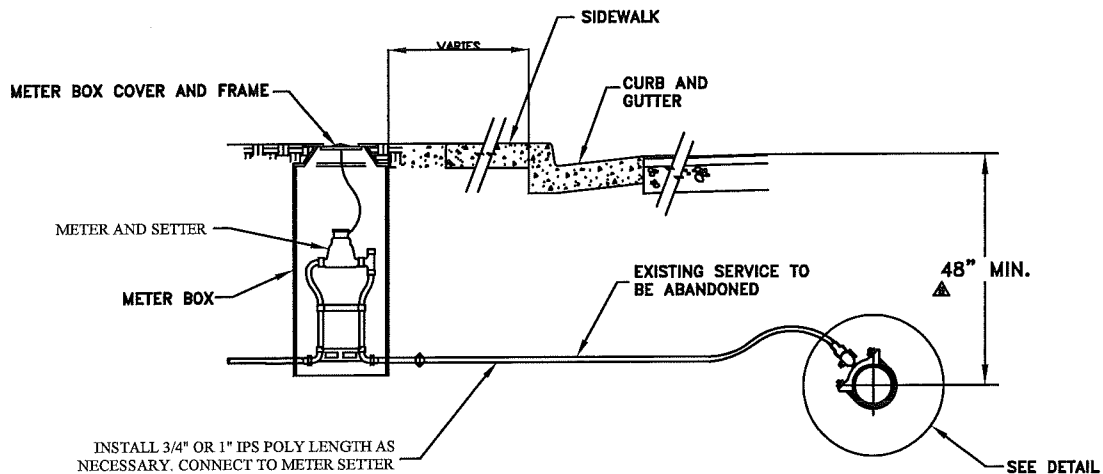
**WATER METER COVER**  
N.T.S.

PREPARED BY: \_\_\_\_\_



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	DRAWN:  DATE  BY	<b>METER SERVICE</b>		STANDARD DRAWING <b>3091</b>
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#### WATER SERVICE ADJUSTMENTS

##### NOTES:

1. FITTINGS - PROVIDE BRASS FITTINGS AND NIPPLES ON ALL SERVICE LINE CONNECTIONS. DO NOT USE GALVANIZED MATERIALS

2. NO HARD SURFACE WITHIN 2' OF ID

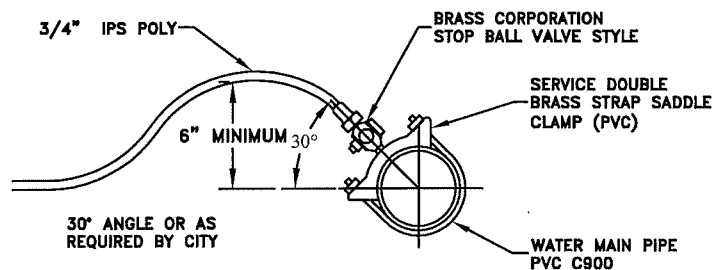
#### TYPICAL CULINARY WATER SERVICE CONNECTION

N.T.S.

##### NOTES:

1. INSPECTION - PRIOR TO BACKFILLING AROUND TAPS, SECURE INSPECTION OF INSTALLATION BY SOUTH JORDAN WATER DEPARTMENT
2. BACKFILL - INSTALL AND COMPACT ALL BACKFILL MATERIAL PER CITY STANDARD
3. TAPPING - PLACE TAPS A MINIMUM OF 36" APART. USE A TAPPING TOOL WHICH IS SIZED CORRESPONDING TO THE SIZE OF THE SERVICE LINE TO BE INSTALLED. NO TAPS WITHIN 36" OF END OF ANY PIPE.

TAPE - TEFLON TAPE OR PIPE DOPE IS REQUIRED ON ALL TAPS



#### SERVICE TAPS

N.T.S.

PREPARED BY: \_\_\_\_\_

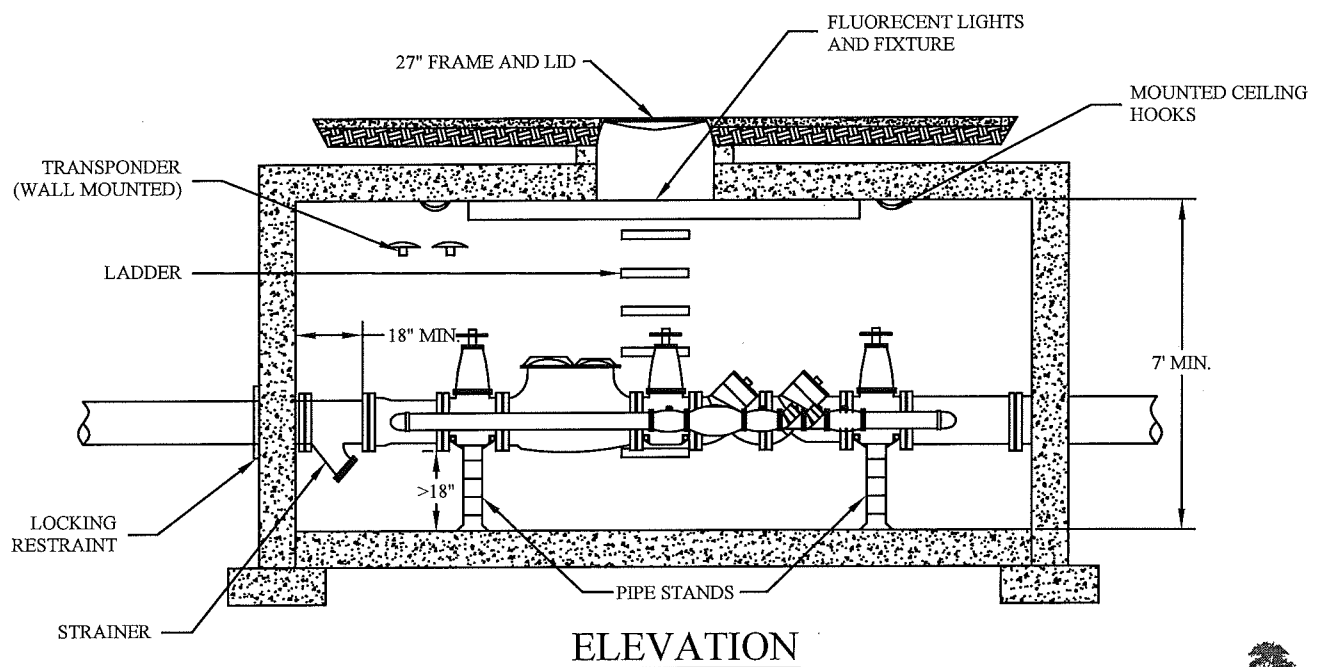
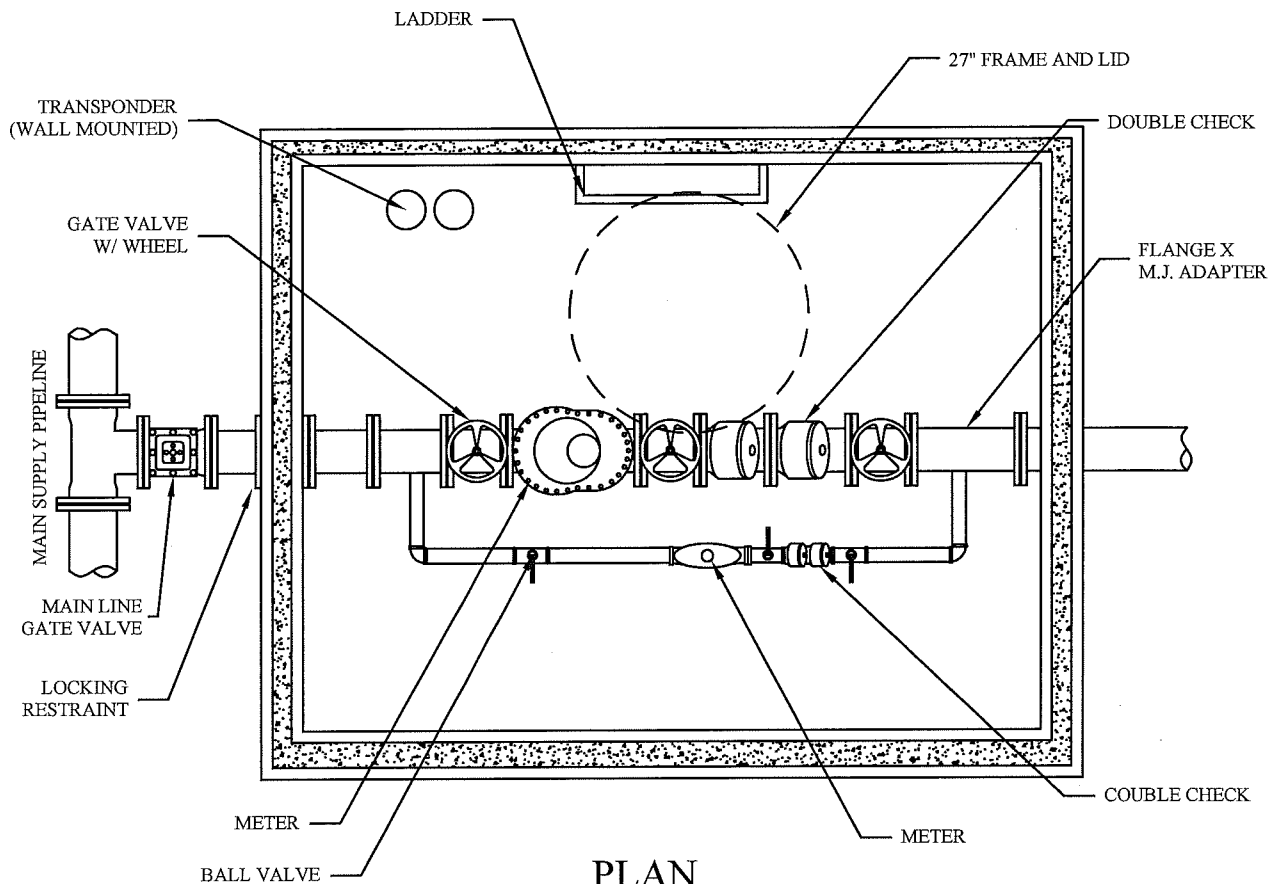


**SOUTH JORDAN CITY**

			DRAWN:
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DATE	REVISIONS	BY	

**3/4" - 2" WATER METER PLAN  
SERVICE INSTALLATION**

STANDARD  
DRAWING  
**3095**



PREPARED BY: \_\_\_\_\_

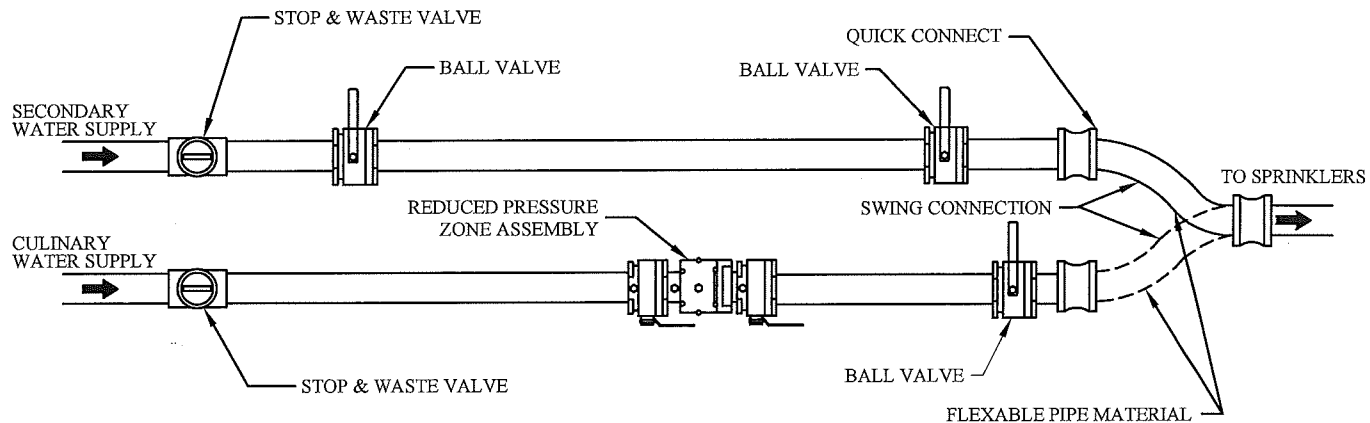


**SOUTH JORDAN CITY**

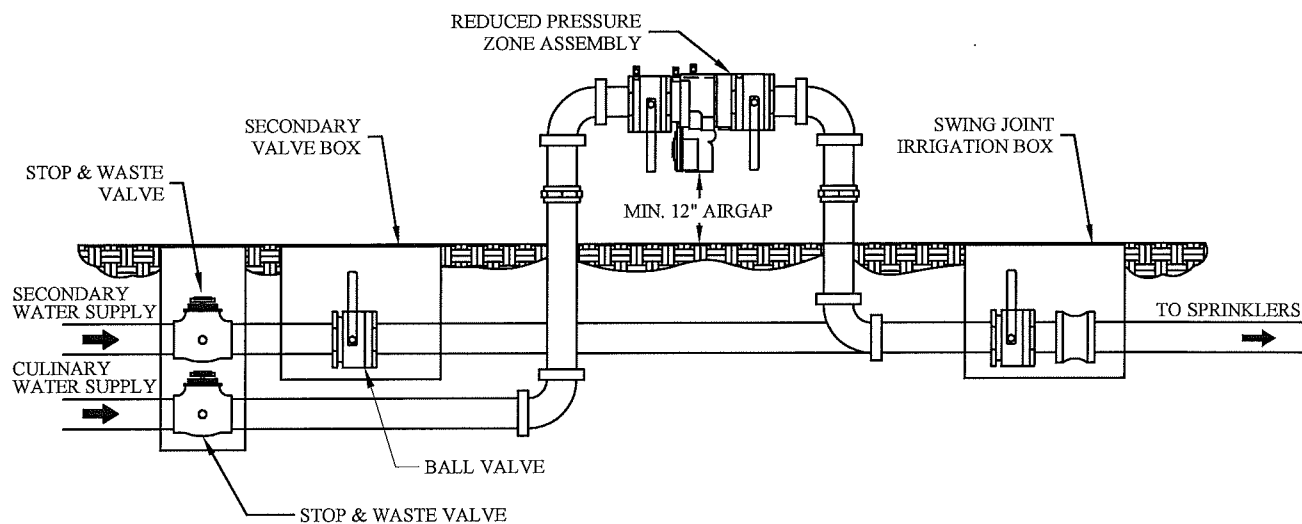
			DRAWN:
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			DATE
			10/08
DATE	REVISIONS	BY	

**3"- 8" WATER VAULT DETAIL**

STANDARD  
DRAWING  
**3100**



**PLAN VIEW**  
NOT TO SCALE



**PROFILE VIEW**  
NOT TO SCALE

**NOTES:**

1. THE SWING CONNECTION IS INSTALLED SO THAT EITHER THE SECONDARY IRRIGATION WATER OR THE CULINARY WATER IS CONNECTED AND FEEDING THE SPRINKLER SYSTEM AT THE ONE TIME, NEVER BOTH.
2. THE REDUCED PRESSURE ZONE ASSEMBLY MUST BE LOCATED AT A MINIMUM OF 12" FROM WALL, FENCE OR OTHER OBSTACLE.
3. THE REDUCED PRESSURE ZONE ASSEMBLY MUST BE LOCATED AT A MINIMUM OF 12" ABOVE GRADE (NOT ALLOWED IN A PIT BELOW GRADE).
4. THE REDUCED PRESSURE ZONE ASSEMBLY MUST BE TESTED BY A CERTIFIED BACKFLOW TECHNICIAN ON AN ANNUAL BASIS.



**SOUTH JORDAN CITY**

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			DATE:
			2/06
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**SECONDARY & CULINARY  
IRRIGATION CONNECTION**

STANDARD  
DRAWING  
**2001**